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ABSTRACT

In this study, gender differences in spelling achievement were investigated for young adults (ages 17 to 21). Performances of males and females on standardized and written spelling tests were compared. All of the 40 students (20 males and 20 females) are from a low-economic, inner city, vocational program. The students were also given a questionnaire to determine their reading attitudes. The females, on the whole, performed better on both tests, but the difference was not significant. Their attitudes towards reading were consistent with their spelling scores. Appendices contain 7 colored bar graphs of data. (Contains 16 references and 2 tables of data). (Author/RS)

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GENDER DIFFERENCES IN SPELLING ACHIEVEMENT

By

Daisy M. Rios

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KEAN UNIVERSITY

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Abstract

In this study, gender differences in spelling achievement were investigated for young adults (ages 17 – 21). Performances of males and females on standardized and written spelling tests were compared. All of the 40 students (20 males and 20 females), are from low- economic, inner city, vocational program. The students were also given a questionnaire, to determine their reading attitudes. The females, on the whole performed better on both tests, but their difference was NOT significant. Their attitudes towards reading was consistent with their spelling scores.

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Research indicates that girls read better than boys as a whole and, because of the relationship between reading and spelling, one might assume that girls would also perform better in spelling than boys (Allred, 1990). Are better readers automatically better spellers? Poor spellers are not less intelligent, less educated or less motivated than better spellers are (Gentry & Gillet, 1993). Still many people interpret poor spelling as a sign of poor education (Mannings, 1986).

A basic difference exists between reading and spelling; reading is a decoding process. Readers are expected to say what they see on the printed page. Spelling on the other hand, is an encoding process. Spellers are required to write what they hear or think. Although both reading and spelling are important aspects of literacy, their processes are different. Although a high correlation exists between the two subjects, one may find good spellers who are not good readers. In addition, good readers does not guarantee good spellers (Allred, 1990).

An individual's skill in the mechanics of written expressions are assumed to be mature by the end of the eighth grade. From that point on, usually little attention is given to spelling at school except to call attention to the students' errors in written papers. This is unfortunate because a large number of high school students cannot spell correctly the words they are suppose to have learned in elementary school. The estimate is that one student in ten gets through high school without sufficient knowledge of spelling for everyday purposes in writing (Hildreth, 1955). A common complaint is that high-school graduates applying for jobs in business offices cannot write, spell or punctuate. In order to function in society, most individuals are required to write in a personal, school or

professional setting. Generally, this requires accurate spelling. Our culture inflicts embarrassment and, in some settings serious consequences on persons who lack competence in spelling. A lack of spelling ability can even adversely effect a person's educational and occupational status (Harward, at al, 1994).

Spelling is related to oral expression, because the way words are pronounced will affect one's spelling habits. English orthography is often considered a highly inefficient system that fails to represent in consistent fashion the relationship between graphic symbols and phonetic expression (Templeton, 1980). Most people inside and outside of education believed that English spelling does not do a good job of representing the pronunciation of words, thus, primary instructional emphasized was usually placed upon rote memory. Since only 50% of all words in the English language are rule-governed, neither the learning of spelling nor the teaching of spelling can be based on the formal drill and repetition of words out of content (Mershon, 1997/98). In recent years a more comprehensive understanding of the nature of English spelling has led to more promising instructional thrusts. More educators now understand that, while memory does play an important role in learning how to spell, it does not play the only role.

Memorization of correct spelling is both possible and necessary. But mastery of the total lexicon cannot be achieved by rote alone. Learners must examine words that they have memorized and learn in a functional way how the system works. We now know that a good speller is not a person who has successfully memorized the most words, but rather someone who knows ways to figure out the logic of words and can construct them as needed (Mershon, 1997/98). For a language as complex as English it takes time.

(Henderson, 1985). Expert spellers visualize words. They have the ability to store and retrieve the visual form of the word in their brain. Poor spellers do not demonstrate equal ability to store and retrieve the visual form of a word. When asked to spell an unfamiliar word, they spell it like it sounds (Gentry and Gillet, 1993). The problem with this approach is the difficulty it poses for the one who must spell it. Not only do our twenty-six alphabet letters not represent sounds consistently, but also some sounds have no letter to represent them. Some letters may have no sound of their own, or some sounds can be signaled by different letters, and some letters may represent different sounds (Henderson, 1985).

Traditionally, comprehensive studies in spelling have utilized proofreading-type-standardized test to measure spelling achievement. In this process, students are asked to proofread words or selections and determine if words are spelled correct. The advantage of such a test is that it is standardized, easily administered, easily scored, and it resembles other sections of achievement tests of which it is usually apart. Also, it can cover four times as many words in the same administration time as the dictated word list. The written spelling test is widely used by classroom teachers and is considered to be a valid method of measuring spelling progress. It is inexpensive and easy to administer, takes little advanced preparation, and all students can be tested simultaneously. Perhaps the greatest strength is that the students actually write the words. A few of the limitations of this method are poor handwriting, clues given by the examiners (need to pronounce the words effectively), and scoring errors. The question arises as to whether spelling ability or proofreading skill is being measured. Evidence exists that there are significant

correlation's between the ability of elementary school children to recognize misspelled words and their ability to actually spell those words (Allred, 1984).

HYPOTHESES

The following study was designed to examine the reading attitudes of an older student and to determine whether young ladies spell better than young men do. It was hypothesized that no significant difference in spelling ability between the sexes will exist.

PROCEDURES

The participants in this study were 20 young men and 20 young ladies (ages 17 – 21). All of the students are from the same socio-economic backgrounds. The students were enrolled in either Office Training or Computer Technology or Hotel and Hospitality classes at Vocational Foundation Inc. (VFI), in New York City. Some of the students are taking the GED (General Education Development) course work.

Albert Vadon, a fellow researcher, and I designed the questionnaire. The questionnaire was developed to gather information on the student's attitude towards reading. The written spelling test (WST) contained 20 words from Contemporary's Word Power. The standardized spelling test (SST) contained 30 multiple-choice questions obtained from Adult Basic Learning Examination (ABLE). The purpose of the spelling tests was to determine if gender made a difference in spelling.

The questionnaire and spelling tests were given in small groups. The first group was 16 males from the Computer Technologies class. Instead of attending their regular classes they had volunteered to fill out a questionnaire and take a spelling test. After the students got settled in their seats I did not state that I was exploring gender differences in spelling. I informed them that I needed the data for school records, this explanation was accepted. As I handed out the questionnaire, I instructed them that I would not be able to help them with any of the questions. I did however go over 1 = strongly disagree and 5 = strongly agree, gender, age and last grade completed. Names were optional. If they weren't sure of a response to make, students were told that they were to look again and make a choice. The questionnaire was collected and a blank spelling sheet was handed out. The students were asked to write only their ages, last grade completed and their sex, names were optional. The procedure used for the written spelling test included the following. The spelling word was said, followed by saying the spelling word in a complete sentence, and then by saying the spelling word again. This format was followed throughout. The spelling sheets were then collected. The standardized spelling test was then administered, with little instruction, except the usual about sex, last grade completed and age. The second group consisted of 13 females from the Office Technology class. I followed the same procedure except that I had both spelling tests stapled together. The third group consisted of 7 females and 4 males from the Hotel and Hospitality class, which is a co-ed group. The only deviation was that I administered the WST first and had the students complete the questionnaire, then complete the SST. The survey and testing was done on three separate days.

RESULTS

On the written spelling test (WST), the females averaged 40.25 percent correct, whereas the males averaged 36.75 percent correct. The females outperformed the males by a small percentage of 3.5 percent; this was not a significant level, as indicated on Table 1.

Table 1
Written Spelling Test Results

Gender	Mean	Standard Deviation	t
Males	7.35	5.81	- .43
Females	8.05	4.48	

The results of the individual performances of both males and females on the WST are shown on appendix I. The results of how the males and females performed on each individual word on the WST are shown on appendix II. The median for the males was 30% and the females 5% higher. The mode for the males was 10% and the females 27% See appendix III. The range for the males on WST was 5 – 95% as opposed to the females, which was 0 – 80%.. Although, the range results indicate some of the males had higher percentage, the females, as a group performed slightly better, but not at a significant level.

On the standardized spelling test (SST), as indicated on Table 2,

Table 2
Standardized Spelling Test Results

Gender	Mean	Standard Deviation	t
Males	13.10	7.61	- 1.90
Females	17.30	6.31	

the males averaged 41.5 percent, and the females again showed a slight, but not at a significant level, by averaging 59.6%, 16 percent more than the males. On the SST the males had the higher individual scores, but the females averaged higher scores. The range for the males was 7 – 90% and the females 17 – 83%. The mode for the males was 33% and the females 80%. See appendix V. The individual results of the SST are on appendix IV.

The questionnaire was design to find out:

1. How much time was spent on reading?
2. Whether reading was considered as masculine or feminine by the genders.
3. Whether or not they considered themselves as good spellers.

Those who scored highest on the spelling test also claimed to read more than 2 hours a day. Ninety-five percent of the females indicated that reading is a feminine activity. Forty-two percent of the males considered reading as a feminine activity. See Appendix VI. Seventy-five percent of the females considered writing as a feminine activity, whereas the sixty-eight percent of the males considered writing a masculine activity. See appendix VII. Of the thirty-five percent of the males that considered

themselves good spellers, sixty proved to be correct. Forty percent of the females thought themselves to be good spellers and 100% of that forty was correct

CONCLUSIONS

On both the standardized and the written tests, there was no significant difference between the genders. The females performed slightly better, but not at a significant level. The males perceived both reading and writing as a masculine activity. The females perceived reading and writing as feminine activity. Those students who considered themselves as "good" spellers did indeed receive the highest scores.

IMPLICATIONS

On the WST, none of the words were phonetically correct. For each group I wrote the correct spelling (after the WST), most of the students were amazed that they had gotten so many incorrect spelling. I explained that these words were difficult to spell due to their non-phonetic spelling. On the WST, some of the females rewrote the words to see which one was visually correct, none of the males used this method. More research needs to be done in order to find out if the same results appear if phonetically correct words are used in the WST.

RELATED RESEARCH

In a study done by Allred (1990), results of a standardized spelling test and a written spelling test were compared. Allred had a sample of 3,024 students, 252 boys and 252 girls at each grade level. A random selection of 28 children (14 boys and 14 girls) from each grade level (grades one through 6). The samples came from high-, medium-, and low-achieving schools as identified by district administrators. The Comprehensive Test of Basic Skills (CTBS) was used for the standardized test and the written spelling test (WST) was constructed using the same words found on the CTBS.

Students in grades one through five achieved significantly higher raw test scores on a test where they are asked to recognize a word than on a test requiring them to actually write the word. When educators are interested in determining elementary school students' actual spelling performance, they should have students write the words. An exception to this might be students in the sixth grade that may perform as well on written test as they do on a spelling recognition test. While students in earlier grades did significantly better on spelling recognition test than on written spelling test, sixth-grade students performed as well on both tests. It can be concluded that differences between students' ability to recognize misspelled words and their ability write words correctly decreased, as students grow older. Allred found a significant correlation between the ability of students to recognize a misspelled word and their ability to physically write the word. This finding confirms the assumptions presently held by many educators that recognition-type standardized spelling test are effective indicators of student's ability to spell. Therefore, if educators desire information concerning students' spelling ability, they are justified in using the present recognition-type standardized spelling achievement

tests to obtain that information. Additional research is needed to determine if this apparent increased ability to spell words correctly in writing was due entirely to increased maturity.

Allred also considered maturation to be a logical major cause of reading differences. Girls matured earlier than boys physically, and one could question whether their verbal abilities, in this case reading, also matured more rapidly and thus accounted for their (the girls) consistently higher reading performance. This theory and other potential causes such as cross-cultural expectations, needs to be further researched. In other countries such as Germany, boys out performed girls in reading. Boys also out performed girls in reading, in Nigeria and England. There seems to be a need for cross-cultural research in the areas of gender differences on reading attitudes and aptitudes.

In a later study done by Allred (1990), gender differences in spelling achievement were investigated for students in grades 1 through 6. Using the same sample as used in his 1984 study. Performances of boys and girls on standardized and written spelling test were compared. The Comprehensive Test of Basic Skills (CTBS) was used for the standardized test and the written spelling test (WST) was constructed using the same words found on the CTBS. At all grade levels the girls identified the correct spelling of substantially more words on the CTBS and substantially more words were spelt correct on the WST. The results of the analyses of variance revealed a significant difference (all p values $< .001$) between boys and girls when averaged across both tests. In each case -girls scored significantly higher. Interactions between gender and tests at each grade level

were non-significant, meaning that the overall differences also existed separately for each test. Conclusion of Allred's study was that girls in general spell better than boys do.

In an older study of achievement differences, Clark (1959) used information he obtained from the California Test Bureau (CTB). The CTB had available the California Test of Mental Maturity (CTMM) and the California Achievement Test (CAT) scores for 69,354 pupils from 341 schools in 48 states. From this a random sample of 75 boys and 75 girls were drawn at grades 3, 5, and 8, from 75 different school systems and cities were represented. The CTMM, which measures intelligence through a sampling of mental processes in five areas:

1. Memory
2. Spatial relationship
3. Logical reasoning
4. Numerical reasoning
5. Verbal concepts

The CTMM, used to measure intelligence, found no sex difference in the area of general intelligence. Any difference in performance was due to differences in mental ability and not due to the sex of the individual.

The CAT has six sections:

1. Reading Vocabulary
2. Reading Comprehension
3. Arithmetic Reasoning
4. Arithmetic Fundamentals

5. Mechanics of English

6. Spelling.

No significant differences were found between the performances of boys and girls at grades three, five and eight for reading vocabulary, reading comprehension, and arithmetic reasoning. For arithmetic fundamentals, there were no differences between the performances of boys and girls at grades three and five, but at grade eight the performances of the girls was slightly better. For mechanic of English, the girls did better than the boys at grades five and eight. As for spelling, the girls performed better at all grades. Conclusion appears to be that for reading and arithmetic there is no basic difference in the performance of boys and girls. However, in the basic skills area of language (mechanics of English and spelling) the performance of girls is superior to the boys. The superior achievement of girls on both the mechanics of English and spelling implies that significant sex differences do exist in the language area. It may be necessary for additional instructional time and materials in language arts, as to bring the boys up to par.

Spelling achievement of fourth graders was assessed using four self-corrected test methods (Harward et al., 1994). Two hundred nine children in two elementary schools in a predominantly middle class community in Utah County, Utah. A 2x2x2 factorial design was implemented. Factors included :

(a) type of feedback (wordwise versus listwise),

(b) presentation mode (oral versus visual), and

(c) student's gender.

Answers to the following questions were sought:

(a) Is there a significant difference in spelling achievement when students self-correct after each word has been dictated as opposed to self-correction after an entire list has been administered?

(b) Is there a significant difference in spelling achievement when students' self-correct hearing the word correctly spelled by the teacher as opposed to self-correcting after seeing a word presented in visual form?

(c) Is there a significant difference in spelling achievement between boys and girls using the four variations of self-correction?

The number of words spelled correct on the wordwise (each word) was higher than the listwise (whole list). The wordwise group gained an average of 2.2 more words. This difference is statistically significant ($p = .05$). The number of words spelled correctly by the visual was 1.0 over the oral. This was statistically non-significant ($p = .40$). Female students outscored male students on the test. However, when gain scores were considered, male students had a non-significantly higher gain of 0.5 words from the pretest to posttest and 1.8 words form pretest to delay test over female students. This difference may be attributed in part to the ceiling effect for girls. Girls who scored higher on the pretest, had little room to make gains. The results for gender were similar across schools, both feedback groups and both presentation groups, and all ability levels. Although much research has been done, most of it has been at the elementary level or through the 8th grade.

In a study made by Oliver E. Harris (1955), spelling achievement in high school and college was found to be surprisingly low. However, the range of ability in every class tested was wide. Average achievement levels found were as follows:

Grade 7	Grade – levels 3 – 4
Grade 8	Grade – levels 4 – 5
Grade 9	Grade – levels 5 - 6
Grade 10	Grade – levels 6 – 7
Grade 11 – 12	Grade - level 7

Achievement for each year except Grade 12 ranged all the way from below Grade 2 to high school level. For Grade 12 the range was from Grade 2 to Grade 12.

Stipek's (1984) study of sex differences in children's attributions for success and failure on math and spelling tests, used 165 students (82 boys and 83 girls) in two fifth grades and two sixth grades classrooms. All classrooms were racially integrated and included children form a wide range of socioeconomic levels. The main focus of this study is to identify sex differences in attributions. Stipek used a questionnaire to measure student's attributions for success and failure. She also had a teacher-prepared math and spelling test. This article did not state what type of math and or spelling test was used. Girls were not more likely than boys to attribute success to luck. On the contrary, luck was not an important factor for either girls or boys. However, girls were more likely to attribute failure on the math test to lack of ability and less likely to attribute than were boys. Girls were also more likely to attribute success to ability than were boys. Girls were also more likely to claim that they did poorly on the math test because math in general,

and this particular math test, was difficult. All of these attributional biases suggest that girls perceive themselves to be relatively inadequate in math. Despite the boys' poorer performance on the spelling test, they did not evidence the kind of self-derogating attributional bias on this test as the girls evidenced on the math test. The one significant sex difference in attributions among in the spelling failure group showed that boys were more likely than girls to attribute their failure to an unstable cause: bad mood, which would not threaten their self-esteem or their expectations for future success. Results indicated that sex differences existed in math but not spelling. Compare to girls, boys perceived themselves to be more competent and did better on the math test. Boys were also less likely attribute failure on the math test to lack of ability and more likely to attribute success to ability than were girls.

May and Ollila (1981) study of reading sex- role attitudes in preschoolers, had a sample of 136 children, 98 from day-care centers and 38 from kindergarten in two elementary schools. Sixty were 5 ½ years old and 76 were 3 ½ years old. The ratio of boys to girls was 1 : 1. Each student received a booklet containing five object items and five action items. Of the five object items, two were considered reading objects. Of the five action items, two were considered reading items. The objects and actions NOT associated with books or reading appear to be evaluated by older boys and girls as about equally appropriate for both sexes. Only younger boys evaluated both reading and non-reading items as more appropriate for boys. Thus, preschool children of both sexes are more likely to assess reading objects and actions as more appropriate to boys than to girls and generally assess non-reading items to be about equally appropriate for both sexes. In

general the present study indicates that preschool children evaluate reading as an activity more appropriate to males than to females. Children of both sexes were more apt to respond that the reading items and objects pictured would be more appropriate for a boy rather than a girl. Boys were on the average stronger in this bias than the girls were. Previous research has indicated that older children perceive reading objects and actions as more feminine than masculine. Why is reading perceived as masculine behavior by preschool children but, later as a feminine activity by older school-age children? If these findings are reliable, further research seems to called for to determine why there is a change of attitudes as children grow older.

A study done by Emans and Patyk (1967), on a population of 145 females and 179 males, ages 12 – 15 and 16 – 19, on reading interests, suggests that individuals are influenced by two factors: the nature of the topic itself and the motive of the reader. In trying to distinguish the reasons for reading, the list of questions included:

1. To get away from it all. (recreational)
2. When I need to make a speech. (informative)
3. About people my own age. (identification)
4. Something artistically written. (aesthetic)

Sex was found to be related to information and aesthetic motives at the .001 level and to the identification motive at the .10 level of significance. Boys ranked seeking information considerably higher than girls (rank first – 41% boys, 24% girls). Thirty-one percent of the girls ranked information fourth, but only 17 percent of the boys gave information a fourth place ranking. Boys had no strong or weak identification motive compared with

girls. Girls were more apt to read for identification than boys. Few members of either sex gave aesthetics a high rating; 5%of the boys and 12% of the girls ranked it first. When the reading level factor was examined, it was the "poor reader" who sought identification for reading. Younger students were most likely to rank recreation higher than the older student (.10 level). Forty-seven percent of the younger group ranked recreation first. Nevertheless, 38 percent of the older students still gave recreation the number one position.

Pajares and Valiante's 1998, study of grade level and gender differences in writing, used 742 students from a public middle school in the South (376 girls and 366 boys, 243 6^{th} grade, 237 7^{th} grade, and 262 8^{th} grade). The social-economics status of the school was largely middle class, and primarily White. During the first period students were asked to complete an attitude questionnaire, and during the second period a 30 minute essay. The focus of the study was to analyze gender differences in confidence. The students were asked six questions to determine how they compared their writing ability with that of their peers:

1. whether they believed they were better writers than the boys in the class
2. whether they believed they were better writers than the girls in the class
3. whether they believed they were better writers than the boys in the school
4. whether they believed they were better writers than the girls in the school
5. whether they believed they were better writers than all the students in the class
6. whether they believed they were better writers than all the students in the school.

Students in the 8th grade were judged more competent writers by their teachers, and results of the ability comparisons revealed that they considered themselves better writers than their peers at the school to a greater degree than did the 6th or 7th grade students. When students were asked whether they were better writers than the boys in their class or in their school, girls expressed a greater degree of superiority than did the boys. It is especially noteworthy to contrast the nearly 1-point difference on the 6-point Likert scale between girls' comparison with the boys in their class (4.3) and boys' comparisons with the girls in their class (3.4), $t = 10.3$. $p<.0001$. Similarly, when asked whether they were better writers than the boys in their school, girls averaged 3.5; when asked whether they were better writers than the girls in their school, boys averaged 2.9, $t = 7.3$, p,.0001. Clearly, girls believed themselves superior to the boys, and the boys tented to agree.

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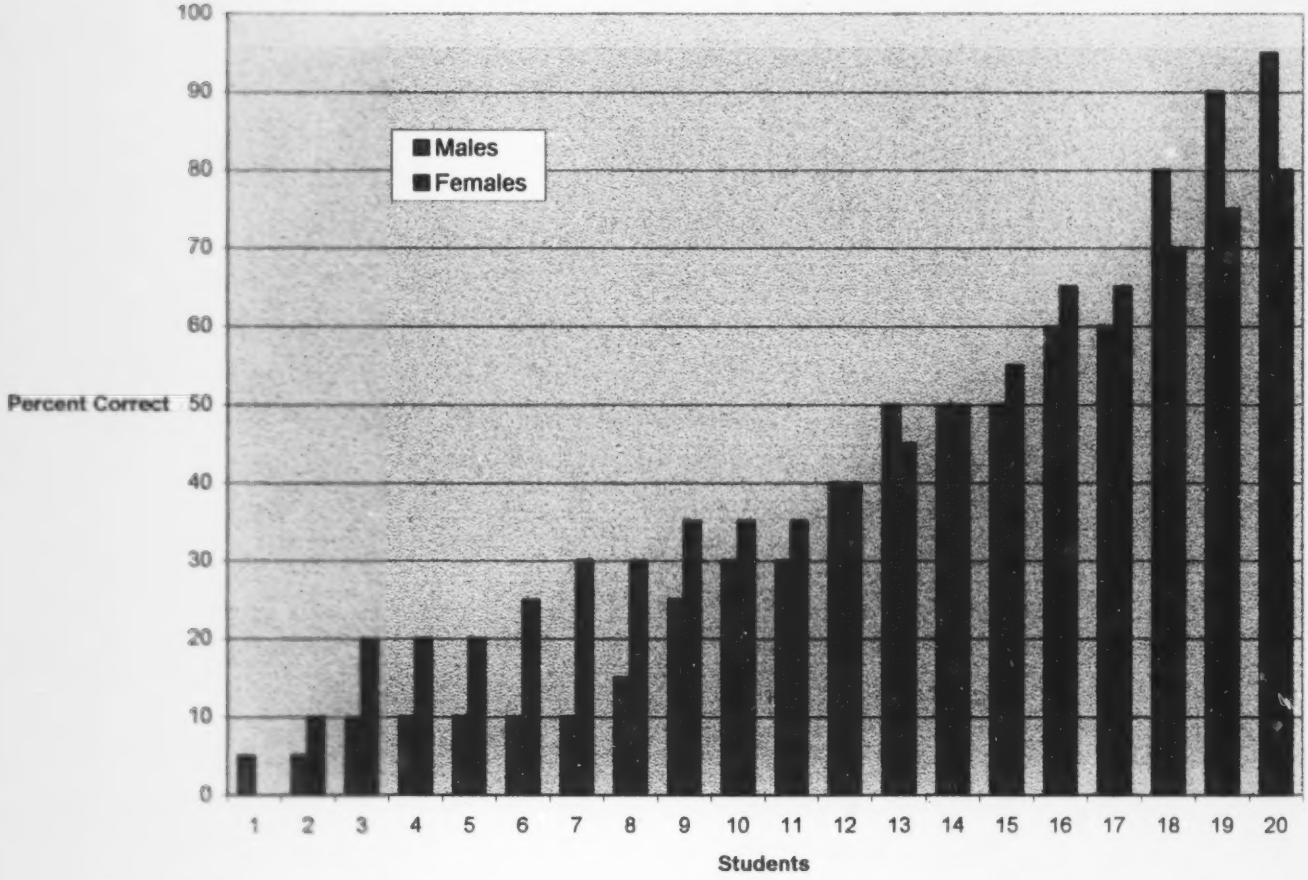
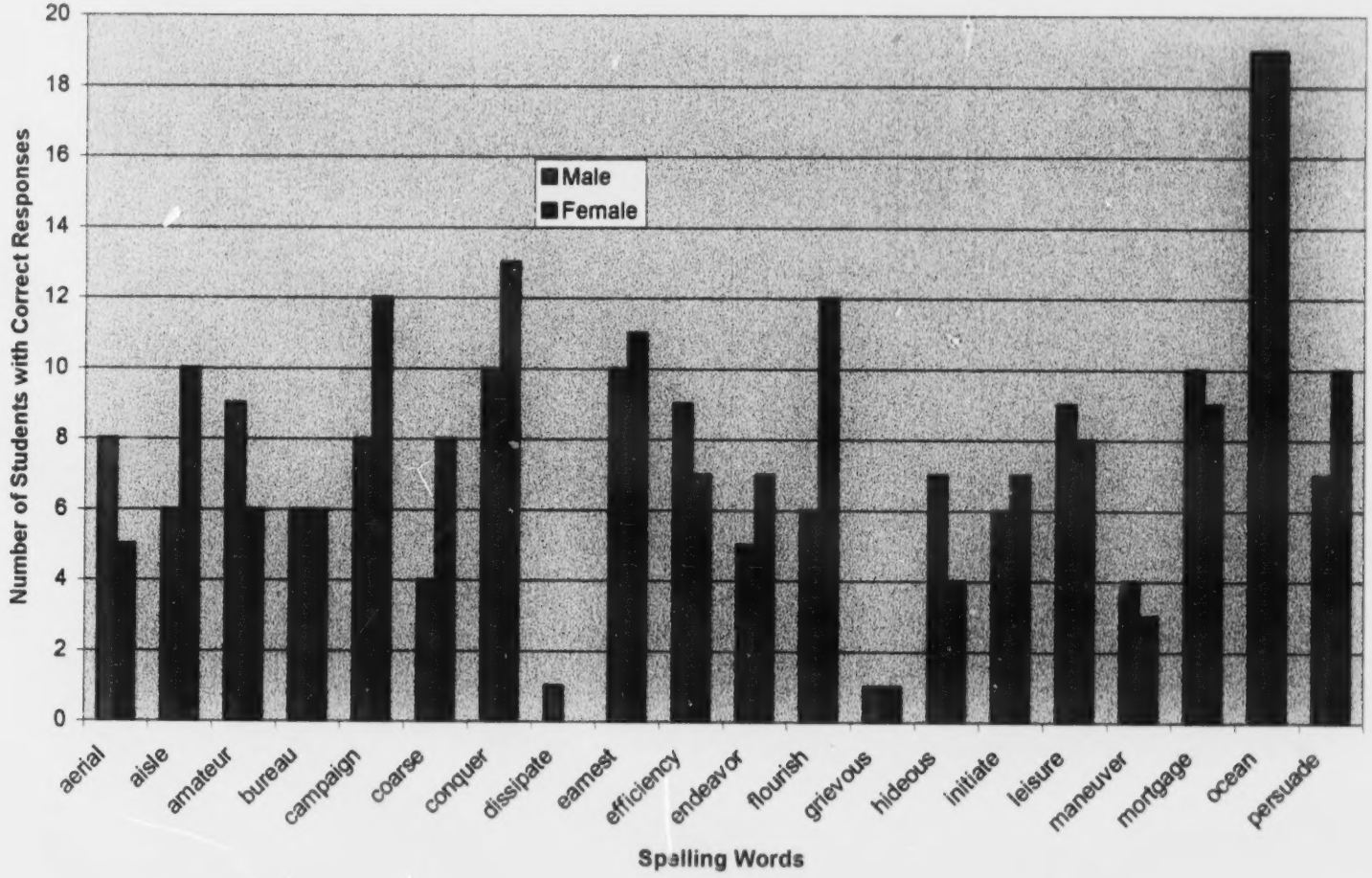
APPENDICES

APPENDIX I

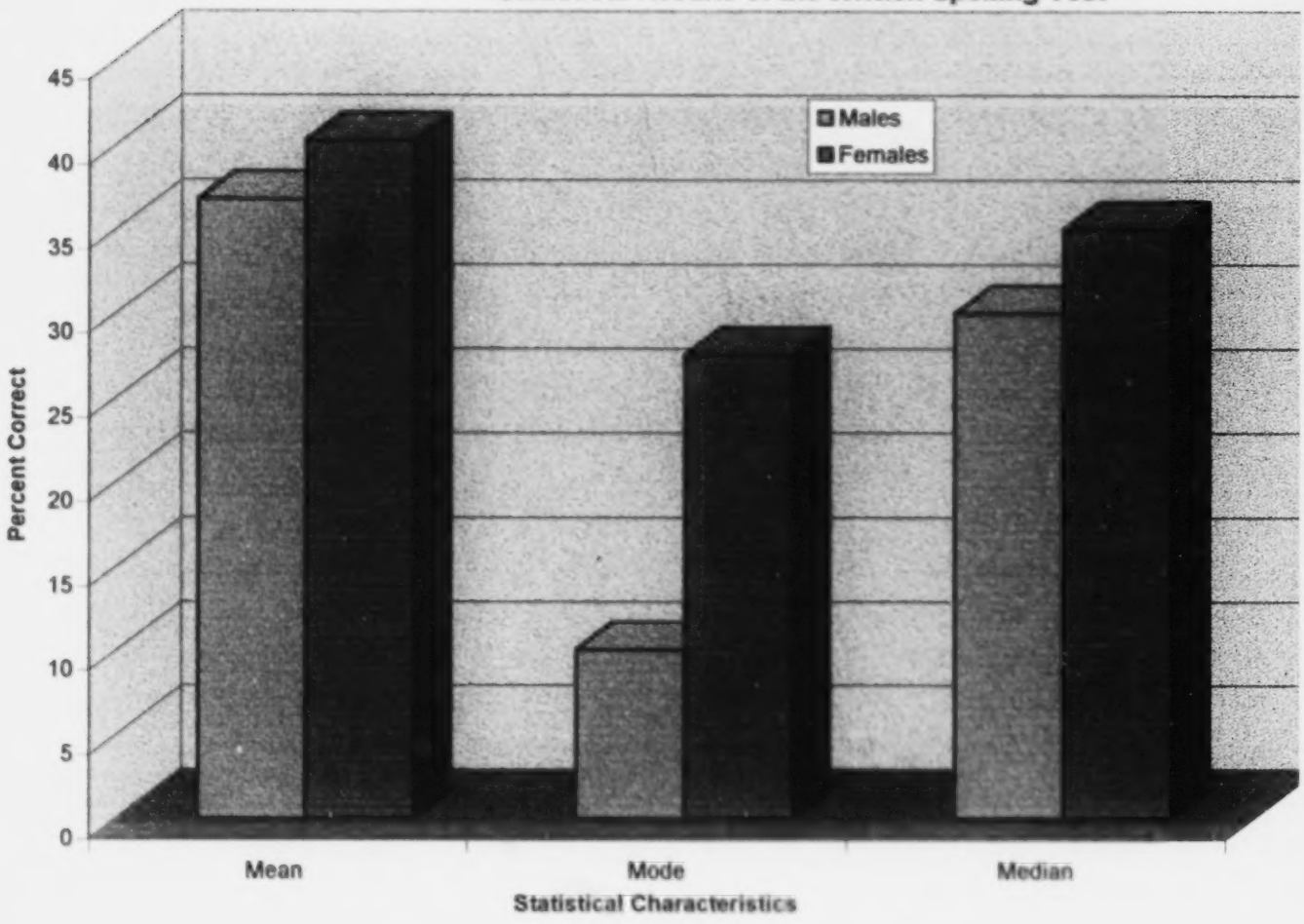
Individual Results of the Written Spelling Test



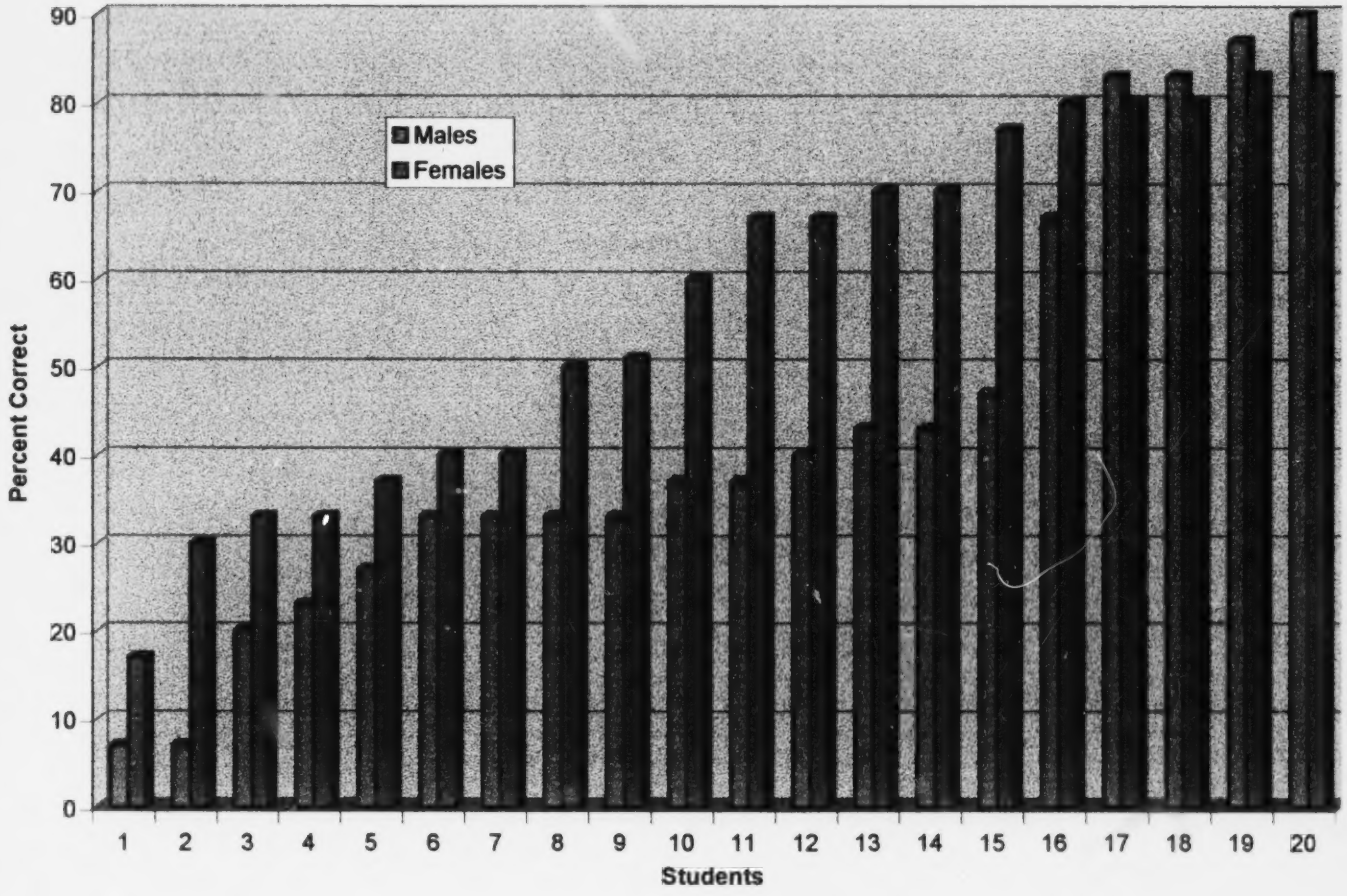
APPENDIX II
Results of the Individual Words on the Written Spelling Test



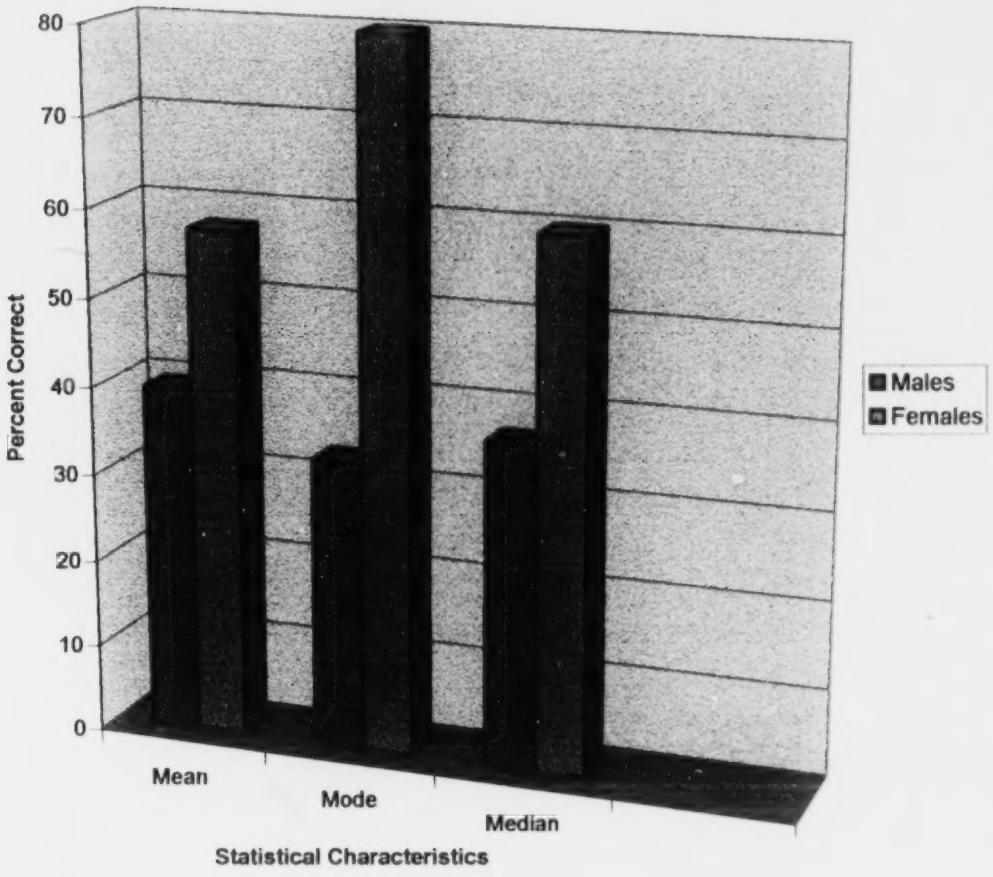
APPENDIX III
Statistical Results of the Written Spelling Test



APPENDIX IV
Individual Results of the Standardized Spelling Test

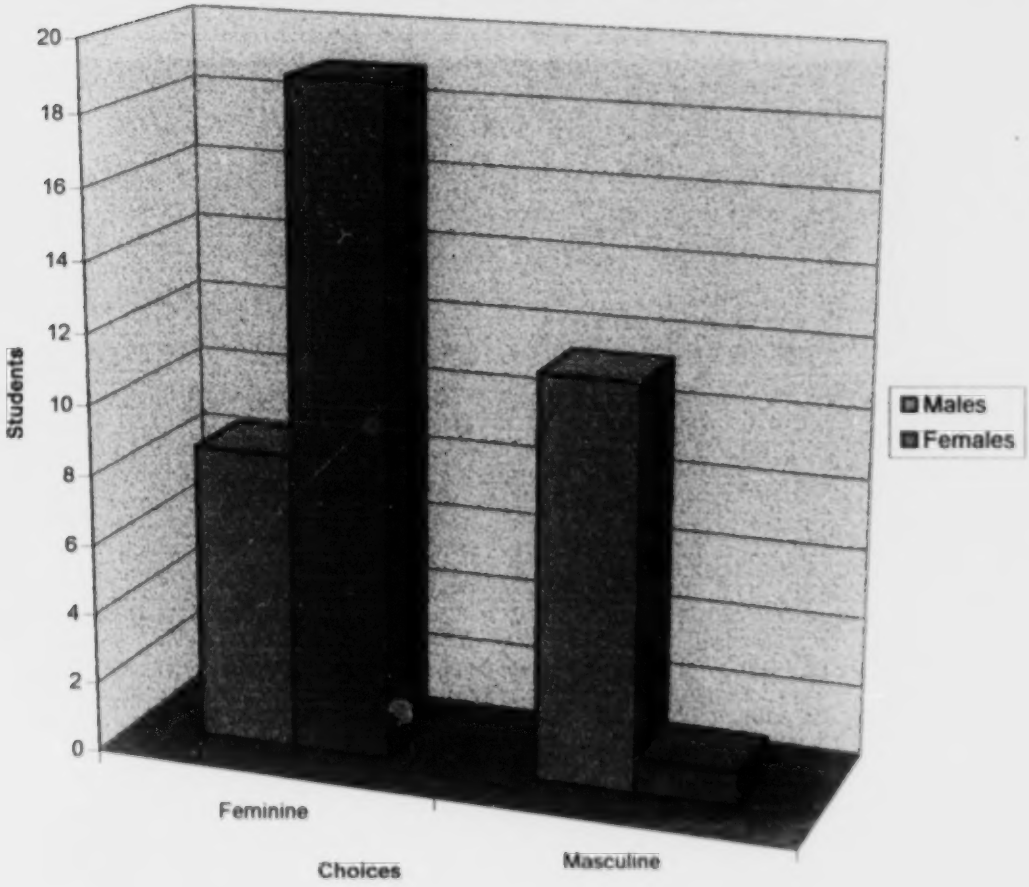


APPENDIX V
Statistical Results of the Standardized Spelling Test



APPENDIX VI

Reading as Masculine or Feminine Activity



APPENDIX VII
Writing as Masculine or Feminine Activity